

7/28/2003

INFORMAL COMMUNICATION

10/004,714

SCHWEGMAN ■ LUNDBERG ■ WOESSNER ■ KLUTH

PATENT, TRADEMARK & COPYRIGHT ATTORNEYS

P.O. Box 2938

Minneapolis, MN 55402

Telephone (612) 373-6900

Facsimile (612) 339-3061

Fax Transmission

To: Examiner Ginette Peralta
USPTO, Art Unit 2814

From: Marvin L. Beekman
Date: July 28, 2003

Re: **INFORMAL COMMUNICATION**

Serial No.: 10/004,714

METHOD OF DEPOSITING TUNGSTEN NITRIDE USING A SOURCE GAS COMPRISING SILICON

Filing Date: 12/05/2001

Docket: SLWK # 303.444US5

Fax #: 703-746-3885

You should receive 4 page(s) including this one.
If you do not receive all pages, please call (612) 373-6960.

INFORMAL COMMUNICATION FOR DISCUSSION PURPOSES ONLY

Dear Examiner Peralta:

The purpose of this informal communication is to facilitate a discussion regarding the rejection under §112, first paragraph, and more particularly, regarding the written description requirements. This communication is organized as follows:

1. Identification of the §112, first paragraph, rejection.
2. Purpose of Written Description
3. Test for Satisfying Written Description
4. Applicant's Position

Regards,

Marvin L. Beekman
(612) 373-6960

This transmission contains information that is confidential and/or legally privileged. It is intended for use only by the person to whom it is directed. If you have received this facsimile in error, please notify us by telephone immediately so that we can arrange for the return of the original documents to us. If you do NOT receive all of the pages, please telephone us in the U.S.A. at (612) 373-6900 or FAX us at (612) 339-3061.

7/28/2003

INFORMAL COMMUNICATION

10/004,714

1. Claims 41-65, 69-74 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The rejection states:

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant's disclosure does not teach a tungsten nitride layer that includes silicon. Throughout the specification there is no recitation of a tungsten nitride layer that includes silicon.

(Emphasis Added)

Paragraph 6 of the Office Action includes a response to previous arguments, and states:

With regards to applicant's argument that the method taught in the specification results in a tungsten nitride layer including silicon, it is noted that there is not single statement in the specification that reads that the layer formed is a "tungsten nitride layer including silicon", therefore the disclosure does not provide for a tungsten nitride layer that includes silicon. Even though the specification clearly indicates that the source gas includes silicon, there is no clear recitation that the tungsten nitride layer includes silicon. (Emphasis Added).

2. Purpose of Written Description Requirement:

The purpose of the written description requirement is to prevent an application from later asserting that he invented that which he did not; the application for a patent is therefore required to recount his invention in such detail that his future claims can be determined to be encompassed within his original creation. *Moba, B.V., Staalkat, B.V., and FPS Food Processing Systems, inc., v. Diamond Automation, Inc.*, 325 F.3d 1306 (Fed. Cir. 2003), citing *Amgen Inc. v. Hoechst Marion Roussel Inc.*, 314 F.3d 1313, 1330 (Fed. Cir. 2003).

3. Written Description Requirement / Test

The written description requirement maybe satisfied if in the knowledge of the art the disclosed function is sufficiently correlated to a particular, known structure. *Moba*, 325 F.3d at 1320, citing *Amgen*, 314 F.3d at 1332.

The test for compliance with §112 has always required sufficient information in the

This transmission contains information that is confidential and/or legally privileged. It is intended for use only by the person to whom it is directed. If you have received this facsimile in error, please notify us by telephone immediately so that we can arrange for the return of the original documents to us. If you do NOT receive all of the pages, please telephone us in the U.S.A. at (612) 373-6900 or FAX us at (612) 339-3061.

-3

7/28/2003

INFORMAL COMMUNICATION

10/004,714

original disclosure to show that the inventor possessed the invention at the time of the original filing. The possession test requires assessment from the viewpoint of one of skill in the art. The written description requirement does not require the applicant to describe exactly the subject matter claimed, instead the description must clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed. *Moba*, 325 F.3d at 1320-1321.

The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language. *In re Kaslow*, 707 F.2d 1366 (Fed. Cir. 1983).

To comply with the description requirement it is not necessary that the application describe the claimed invention in *ipsis verbis* *In re Edwards*, 568 F.2d 1349 (C.C.P.A. 1978).

The claimed subject matter need not be described in *haec verba* to satisfy the description requirement. It is not necessary that the application describe the claimed limitations exactly *In re Herschler*, 591 F.2d 693 (C.C.P.A. 1979). In "*haec verba*" is Latin for "in these words" which refers to stating the exact language.

The fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. MPEP §2163.02.

The subject matter of the claim need not be described literally (i.e. using the same terms or in *haec verba*) in order for the disclosure to satisfy the description requirement. MPEP §2163.02.

The originally filed disclosure can expressly, implicitly, or inherently support the claim limitations. MPEP §2163.

4. Applicant's Position

Applicant respectfully asserts that the rejection improperly reduces the written description requirement to require a specific recitation of a tungsten nitride layer includes silicon. The case law and the MPEP clearly indicate that the written description requirement can be satisfied without using the exact term used in the claim. Rather, the

This transmission contains information that is confidential and/or legally privileged. It is intended for use only by the person to whom it is directed. If you have received this facsimile in error, please notify us by telephone immediately so that we can arrange for the return of the original documents to us. If you do NOT receive all of the pages, please telephone us in the U.S.A. at (612) 373-6900 or FAX us at (612) 339-3061.

7/28/2003

INFORMAL COMMUNICATION

10/004,714

written description requirement is satisfied if the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed.

Applicant asserts that, while the specification may not recite verbatim "a tungsten nitride layer that includes silicon", the text of the specification does support a tungsten nitride layer that includes silicon because it conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed.

The tungsten nitride is chemically vapor deposited from a source gas comprising a silicon based gas (page 3 lines 9-10, page 5 lines 4-5). The specification identifies tungsten sources, nitrogen sources, and silicon sources for the source gas (page 6 lines 3-9). Additionally, the specification identifies pressures, temperatures and flow rates (page 6 line 9 to page 7 line 8).

The specification clearly indicates that the source gas includes silicon. For example, the specification indicates that the source gas comprises a silicon based gas (page 6 lines 7-9), and that silane or other silicon based gas is added to the source gas mixture at a flow rate that falls within a specific range of the total flow rate of the source gas (page 6 line 20 to page 7 line 8). Furthermore, the source gas is maintained at a pressure conducive to chemical vapor deposition (page 6 lines 9-10). Additionally, the specification indicates that the addition of silane or other silicon-based gas reduces encroachment into any silicon based materials exposed to the tungsten nitride, improves adhesion of the tungsten nitride to its underlying layer, and reduces the bulk resistivity of the tungsten nitride (page 7 lines 1-5). Thus, the addition of the silicon-based gas directly affects the deposited layer.

Chemical vapor deposition (CVD) is well-known to those of ordinary skill in the semiconductor art. Given the source gas mixture having a silicon based gas (e.g. Abstract) for a CVD process and the distinction between source gases and carrier gases (page 4, lines 8-14) identified in the specification, one of ordinary skill in the art would recognize that the inventor had possession of the claimed invention at the time of the original disclosure. Thus, Applicant asserts that the written description requirement has been met.

This transmission contains information that is confidential and/or legally privileged. It is intended for use only by the person to whom it is directed. If you have received this facsimile in error, please notify us by telephone immediately so that we can arrange for the return of the original documents to us. If you do NOT receive all of the pages, please telephone us in the U.S.A. at (612) 373-6900 or FAX us at (612) 339-3061.
